



954

**DETECTOR AMPLIFIER PENTODE**

ACORN TYPE

*Especially for wavelengths as short as 0.7 meter*

Heater	Coated Unipotential Cathode	
Voltage	6.3	a-c or d-c volts
Current	0.15	amp.
Direct Interelectrode Capacitances:		
Grid to Plate*	0.007 max.	μf
Input	3.4	μf
Output	3.0	μf
Overall Length		1-11/16" ± 3/16"
Overall Diameter		1-3/32" ± 1/16"
Bulb		T-4½
End Terminals	See Outline in GENERAL SECTION	Two
Base		Small Radial 5-Pin
Pin 1-Heater		Pin 5-Cathode
Pin 2-Grid No.2		P-Plate
Pin 3-Grid No.3		G <sub>1</sub> -Grid No.1
Pin 4-Heater		
RCA Socket		Stock No.9925
RCA Grid & Plate Clips		Stock No.9939
Mounting Position		Any



P is on Long Part of Bulb: Top  
G<sub>1</sub> is on Short Part of Bulb: Bottom  
BOTTOM VIEW (5BB)

*Maximum and Minimum Ratings Are Design-Center Values*A-F AMPLIFIER

D-C Plate Voltage	250 max.	volts
D-C Screen (Grid No.2) Voltage	100 max.	volts
D-C Grid (No.1) Voltage	-3 min.	volts
Plate Dissipation	0.5 max.	watt
Screen Dissipation	0.1 max.	watt
D-C Heater-Cathode Potential	80 max.	volts

*Characteristics— Class A<sub>1</sub> Amplifier:*

D-C Plate Voltage	90	250	volts
Suppressor (Grid No.3) Connected to cathode at socket			
D-C Screen Voltage	90	100	volts
D-C Grid Voltage <sup>■</sup>	-3	-3	volts
Plate Resistance	1.0	Greater than 1.0	megohm
Transconductance	1100	1400	μmhos
D-C Plate Current	1.2	2.0	ma.
D-C Screen Current	0.5	0.7	ma.

*Typical Operation with Resistance-Coupling:*

Plate-Supply Voltage <sup>○</sup>	250	volts
Suppressor Connected to cathode at socket		
D-C Screen Voltage	50	volts
D-C Grid Voltage <sup>■</sup>	-2.1	volts
Load Resistance	0.25	megohm
D-C Plate Current	0.5	ma.
Second Harmonic Distortion	5	%
Voltage Output	40 to 50 RMS	volts
Voltage Gain	100 approx.	

\* , ■ , ○: See next page.

← Indicates a change.

JUNE 30, 1944

RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

DATA

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## DETECTOR AMPLIFIER PENTODE

(continued from preceding page)

### DETECTOR

D-C Plate Voltage	250 max.	volts
D-C Screen (Grid No.2) Voltage	100 max.	volts
D-C Heater-Cathode Potential	80 max.	volts

#### Typical Operation—Biased Detector:

Plate-Supply Voltage <sup>o</sup>	250	volts
Suppressor (Grid No.3) Connected to cathode at socket		
D-C Screen Voltage	100	volts
D-C Grid (No.1) Voltage	-6 approx.	volts
Load Resistance	0.25	megohm
D-C Plate Current	Adjusted to 0.1 ma. with no input signal	
Cathode Resistor	20000 to 50000	ohms

● With shield baffle.

■ Under maximum rated conditions, the resistance in the grid circuit should not exceed 0.5 megohm with fixed bias, or 1.0 megohm with cathode bias.

<sup>o</sup> This is a plate-supply voltage value. The voltage effective at the plate will be plate-supply voltage minus the voltage drop in load caused by the plate current.

R-f grounding by means of condensers placed close to the tube terminals is required if the full capabilities of the 954 for ultra-high-frequency uses are to be obtained. It is important in the cases of the plate and control-grid circuits that separate r-f grounding returns be made to a common point in order to avoid r-f inter-action through common return circuits. It may also be advisable in some applications to supplement the action of the by-pass condensers by r-f chokes placed close to the condensers in the return or supply lead for the grid, the screen, the suppressor, the plate, and the heater.

### TYPICAL R-F AMPLIFIER CIRCUIT

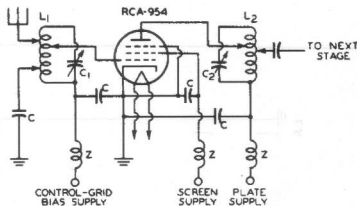
For ultra-high frequencies, coils L1 and L2 may be tapped at suitable points determined by test to reduce effect of tube loading on circuit impedances.

Because electronic plate loading is not serious in a pentode, the use of coil L2 with tapped plate connection may not be necessary to give satisfactory results.

The condensers should all be of high quality and be designed for ultra-high frequency operation.

The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

92CM-4386R2



WAVE-LENGTH RANGE	2.75 TO 5.3 METERS APPROX.	1 TO 3 METERS APPROX.	0.8 METER APPROX.
L <sub>1</sub> , L <sub>2</sub>	10 N <sub>2</sub> 16 B.C.* 3/8 3/4	4 N <sub>2</sub> 16 B.C.* 3/8 5/16	5 N <sub>2</sub> 30 B.C.* 1/8 1/8
C <sub>1</sub> , C <sub>2</sub> (VARIABLE)	3 TO 25 μμf	3 TO 25 μμf	3 TO 4 μμf
C	100 TO 500 μμf	100 TO 500 μμf	100 TO 500 μμf
Z	15 N <sub>2</sub> 30 1/4 S.L. <sup>o</sup>	15 N <sub>2</sub> 30 1/4 S.L. <sup>o</sup>	15 N <sub>2</sub> 30 1/4 S.L. <sup>o</sup>

\*B.C.=BARE COPPER

<sup>o</sup>S.L.=SINGLE LAYER

← Indicates a change. NOTE: THE ABOVE DATA ARE NECESSARILY APPROXIMATE

JUNE 30, 1944

RCA VICTOR DIVISION  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

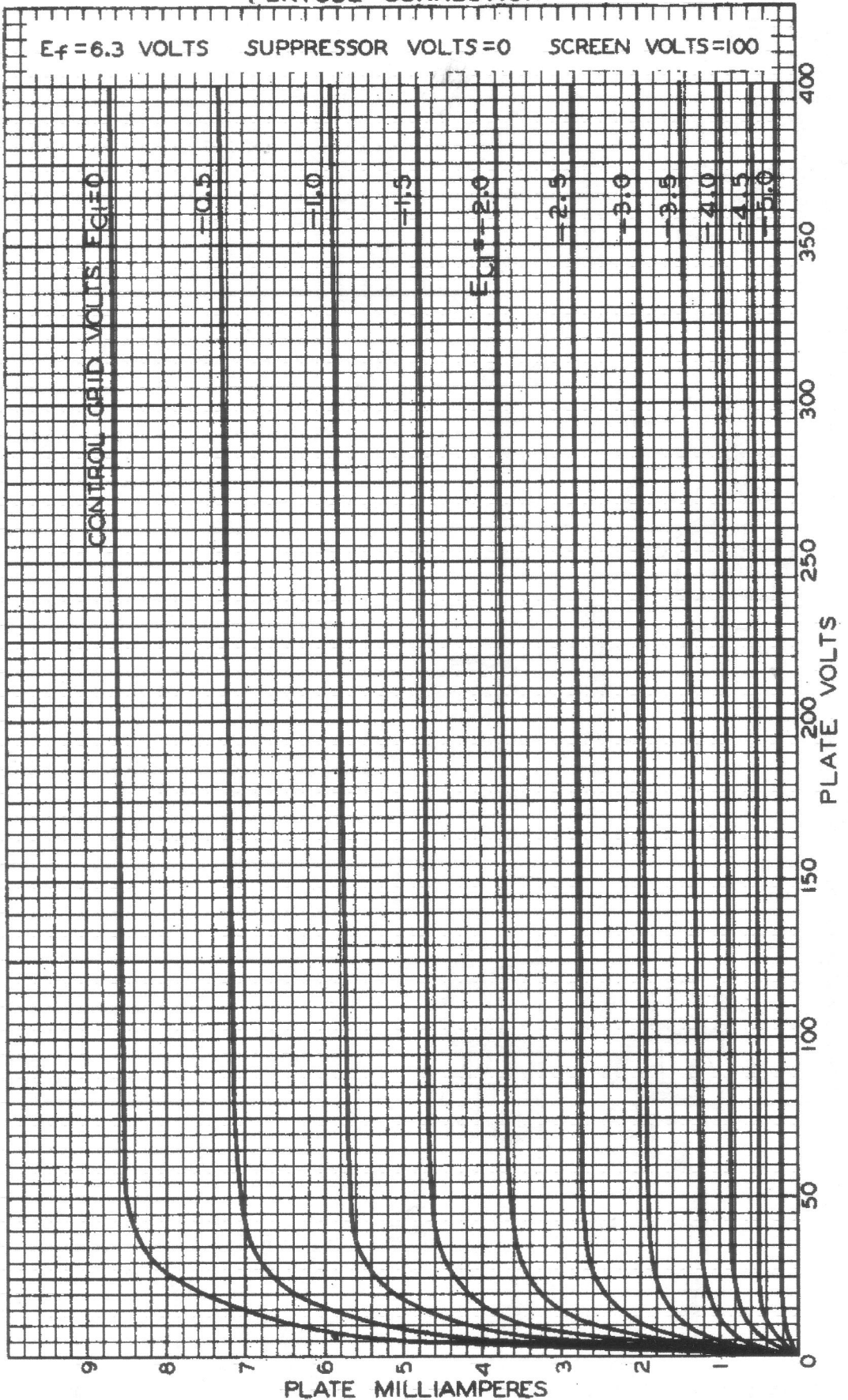
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### AVERAGE PLATE CHARACTERISTICS PENTODE CONNECTION



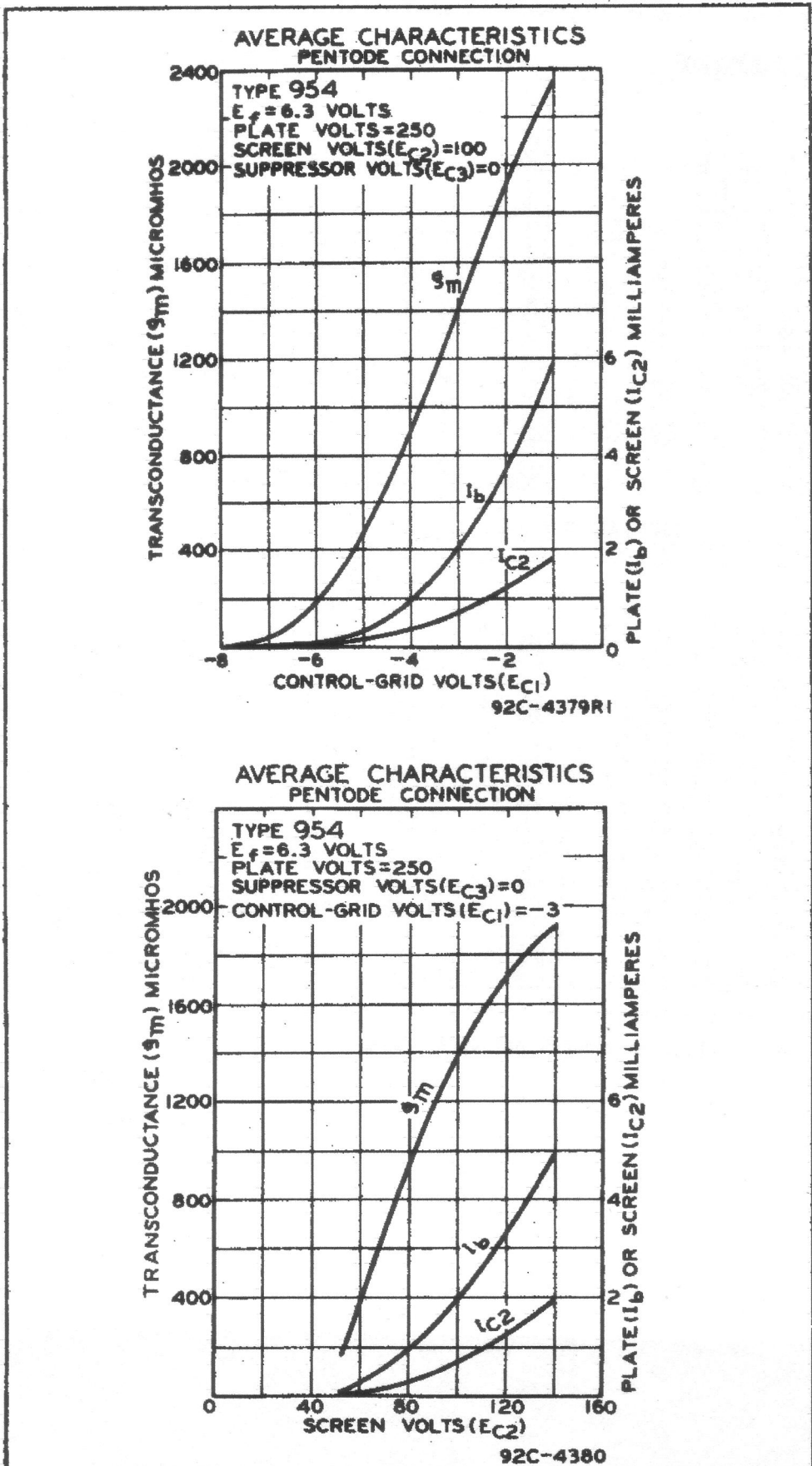
MAR. 11, 1935

RCA RADIOTRON DIVISION  
RCA MANUFACTURING COMPANY, INC.

92C-4378



## CHARACTERISTICS CURVES



July 1, 1941

RCA RADOTRON DIVISION  
RCA MANUFACTURING COMPANY, INC.

92C-4379R1

92C-4380